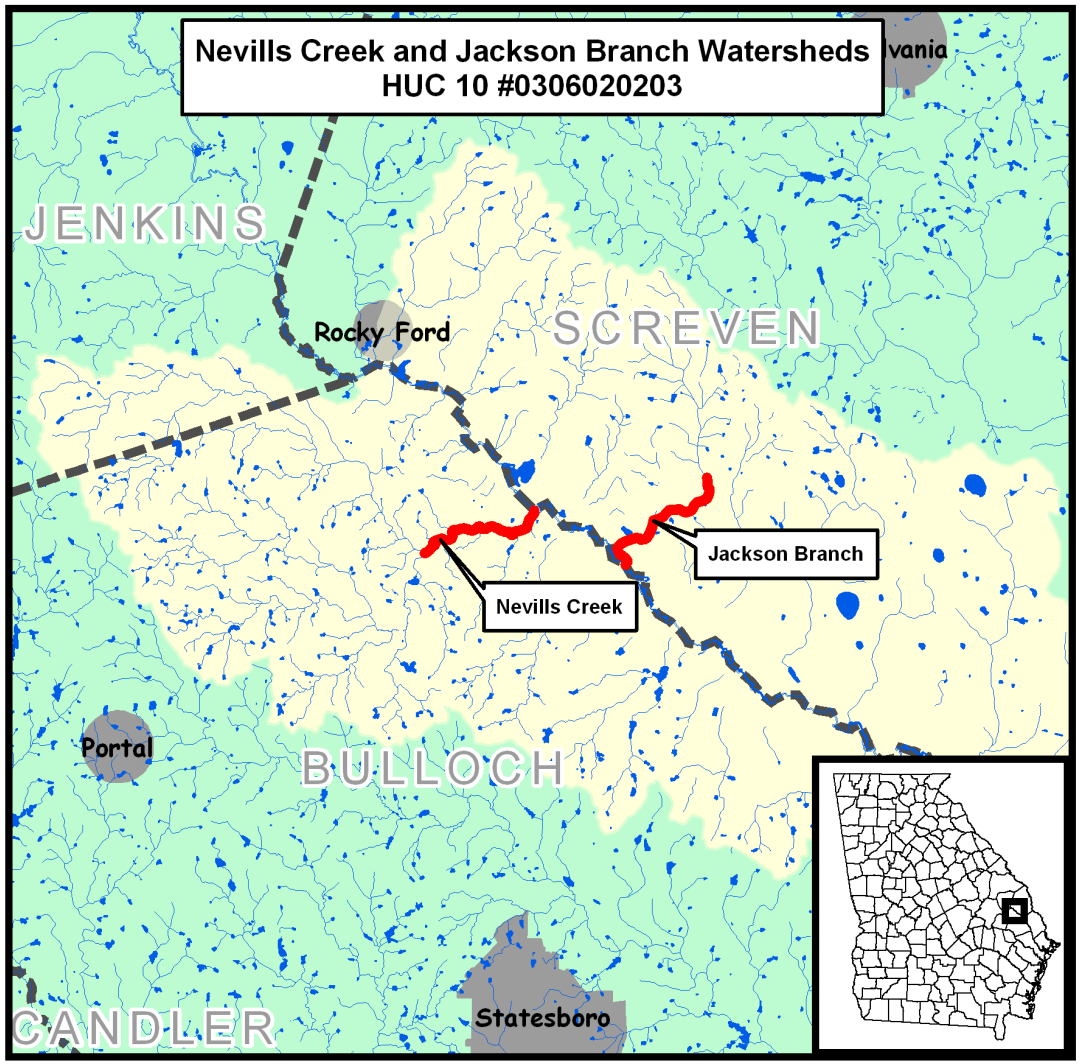
Plan for




**STATE OF GEORGIA**
**TIER 2 TMDL Implementation Plan (Revision # 2)**
**Segment Name:** Jackson Branch, Upstream King Finishing Company from SR17 to Co. Rd. 39, Dover
**Date:** June 15, 2007
**River Basin:** Ogeechee River Basin
Local Watershed Governments: Screven County

## I. INTRODUCTION

Total Maximum Daily Load (TMDL) Implementation Plans are platforms for evaluating and tracking water quality protection and restoration. These plans have been designed to accommodate continual updates and revisions as new conditions and information warrant. In addition, field verification of watershed characteristics and listing data has been built into the preparation of the plans. The overall goal of the plans is to define a set of actions that will help achieve water quality standards in the state of Georgia.

This implementation plan addresses the general characteristics of the watershed, the sources of pollution, stakeholders and public involvement, and education/outreach activities. In addition, the plan describes regulatory and voluntary practices/control actions (Best Management Practices, or BMPs) to reduce pollutants, milestone schedules to show development of the BMPs (*measurable milestones*), and a monitoring plan to determine BMP effectiveness.

**Table 1. IMPAIRED SEGMENTS IN THE HUC 10 WATERSHED**

| IMPAIRED SEGMENT | IMPAIRED SEGMENT LOCATION | EXTENT (mi/ac) | CRITERIA VIOLATED | EVALUATION |
|---|---|---|---|---|
| Jackson Branch | Downstream King Finishing Company from SR17 to Ogeechee River, Dover | 1 miles | Fecal Coliform | Not Supporting |
| Jackson Branch | Upstream King Finishing Company from SR17 to Co. Rd. 39, Dover | 2 miles | Fecal Coliform | Partially Supporting |
| Nevils Creek* | Bay Gull Creek to Ogeechee River near Rocky Ford | 3 miles | Dissolved Oxygen* | Not Supporting |
| Nevils Creek | Bay Gull Creek to Ogeechee River near Rocky Ford | 3 miles | Fecal Coliform | Not Supporting |
| Ogeechee River* | Hwy. 102 to U.S. Hwy 301 | 98 miles | Trophic-Weighted Residue (Hg)* | Partially Supporting |

* Plan to be done by EPD

## II. GENERAL INFORMATION ABOUT THE HUC 10 AND THE SPECIFIC SEGMENT WATERSHED

Following is a review of watershed characteristics including its size and location, political jurisdictions, physical features, land uses, and identified potential sources of pollutants that could cause or contribute to violations of water quality standards addressed in this TMDL Implementation Plan. New conditions or changes in information contained in the previous TMDL Implementation Plan should be in **bold** and underlined.

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**Jackson Branch (Upstream segment)** is a 2-mile segment located in southwestern Screven County that begins at the SR 17 bridge and continues northward to County Road 39 near the Dover community. Kings Finishing, a textile/fabric processing company, is located within the Jackson Branch watershed. Kings Finishing, the manufacturing plant with the only NPDES permit in the Jackson Branch watershed, dumped treated wastewater directly into Jackson Branch in the years prior to the 1998 TMDL. This treated wastewater could also have contributed to the elevated fecal coliform levels in Jackson Branch (both upstream and downstream segments) during the sampling period in 1992. Around 1995, the discharge pipe from Kings Finishing was relocated to dump directly into the Ogeechee River. However, the impairments for the stream segment listed in the 1998 TMDL resulted from nonpoint sources.

Current land uses in the Jackson Branch watershed consist of undeveloped forestland, agriculture, a few single-family homes, Kings Finishing, and a cemetery. The main activity occurring in recent years on the land is deer hunting. Recently, a beaver dam was partially cleared on the upstream portion of the stream.

According to the 1998 EPA Fecal Coliform TMDL Development Jackson Branch Watershed, Ogeechee River Basin, the total land coverage in the stream segment watershed is 5,856 acres, and the land use categories include the following:

- 5,324 acres of agricultural lands;
- 447 acres of forest lands; and
- 85 acres of urban.

This plan is being developed based on the information contained in the 1998 TMDL and is a minor revision of the 2001 TMDL Implementation Plan submitted by the CSRARDC.

A field survey on February 26, 2007 was conducted at the bridge crossing on State Road 17. Aerial photos indicate that the majority of agricultural activity occurs in the upstream portion of the segment watershed, although none was visible from the survey site. The stream had a medium flow, tea-colored appearance, contained hydrilla and water hyacinth, and appeared to be at low levels.

Screven County is a Local Issuing Authority for Erosion and Sedimentation permitting of land disturbing activities. The ordinance applies to land disturbing activities on one acre or more and permits are administered through the Screven County Zoning Office. All other municipalities within the county, except the City of Sylvania, submit such permits to the EPD East Central District.

The 2001 TMDL Implementation Plan mentioned that a 70 percent reduction in agricultural nonpoint source contributors had been met for the Jackson Branch watershed prior to development of the implementation plan, although the 1998 TMDL recommended an "80 percent reduction in loading and/or resultant concentrations from agricultural or pasture land uses." Wildlife was mentioned as a possible contributor to the fecal coliform violations. The plan also mentioned that Screven County Public Works Department had performed water quality monitoring of the segment between 1/24/2001 and 1/31/2001 as part of a five-year monitoring schedule. These samples showed that the stream was able to meet the State water quality standards, although, there was no Sampling Quality Assurance Plan in place at that time.

Evaluation of the 2001 TMDL Implementation Plan showed that many activities that could have potentially improved water have already occurred. Some of the stakeholders were surprised that this stream segment is still included on the 2006 State 305(b)/303(d) list due to the efforts of Screven County and the changes in land use.

## III. CAUSES AND SOURCES OF SEGMENT IMPAIRMENT(S) LISTED IN TMDLs

Table 2 provides information contained in the current TMDL for the impaired water body. This includes the name and location of the impaired segment, the water quality criteria violated, and the wasteload and load allocations determined in the TMDL. Potential sources described in the TMDL may include domestic treatment facilities (M), industrial treatment facilities (I), urban runoff and sources (UR), and other nonpoint or unknown (NP) sources. By definition, "wasteload allocations" (WLA) are established for municipal and industrial treatment facilities and storm water discharges in permitted areas (WLAsw), while "load allocations" (LA) are established for nonpoint sources. **Wasteload allocations are assigned by EPD during the NPDES permitting process. They are not part of EPD's TMDL implementation planning process, which deals solely with non-point sources of pollutants.**

**Table 2. WASTE LOAD AND LOAD ALLOCATIONS AND TMDLS FOR THE IMPAIRED SEGMENT**

| STREAM SEGMENT NAME | LOCATION | CRITERIA VIOLATED | WLA | WLAsw | LA | TMDL |
|---|---|---|---|---|---|---|
| Jackson Branch | Upstream King Finishing Company from SR17 to Co. Rd. 39, Dover | Fecal Coliform | N/A | N/A | 672 cfu/mL | 150 cfu/100mL |
| | | | | | | |
| | | | | | | |

Table 3 also contains information presented in the TMDLs that this plan is designed to address. This includes the criteria responsible for the impairment(s), the specific water quality standard(s) violated, potential sources/causes of impairment, and the needed reduction in source loads estimated in the TMDL.

**Table 3. SOURCES OF IMPAIRMENT INDICATED IN THE TMDLs**

| CRITERIA VIOLATED | WQ STANDARD | SOURCES OF IMPAIRMENT | NEEDED % REDUCTION (FROM THE TMDL) |
|---|---|---|---|
| Fecal Coliform Bacteria | 1,000 per 100 ml (geometric mean Nov-April)<br><br>200 per 100 ml (geometric mean May-Oct) | Agricultural or Pasture Land Uses<br><br>Urban Pervious<br><br>Urban Impervious | 80% |

## IV. IDENTIFICATION AND RANKING OF POTENTIAL SOURCES OF IMPAIRMENT

This section identifies and describes, in order of importance, the extent and relative contributions from sources of pollutants listed in Table 2 and identified through this TMDL implementation planning process. This description includes information presented in the current TMDL or TMDL implementation plan and/or collected during the TMDL implementation planning process that either verifies or alters estimates of contributions from the sources listed in the TMDL and repeated in Table 2.

*In the 1998 TMDL, it lists these potential sources of impairments: Agricultural or Pasture Land Uses, Urban Pervious, and Urban Impervious. Oddly, it does not include the Kings Finishing NPDES wastewater treatment facility. The 1998 TMDL takes the approach that modifying land use, particularly agricultural, would be necessary in reducing fecal flow values. That approach is not considered in the development of this plan. Visual field surveys were conducted to evaluate the stream condition and the presence of any of these potential sources of impairments. Aerial photos provided by Georgia EPD show that the buffers are predominantly intact along the impaired stream segment, with the adjacent land coverage along the length of the corridor showing very little signs of disturbance or development. Within the segment watershed, there are extensive signs of agricultural activity (visible from SR 17), most likely contributed to row crops since there are no registered confined animal feeding operations within Screven County. Wildlife is thought to be the most likely contributor, since according to the 2001 implementation plan agricultural livestock activity is believed to have ceased, and the application of manure to pastureland/cropland is not a practice that occurs in the watershed.*

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Table 4 ranks potential sources of water quality impairments in order of importance as determined through this TMDL implementation planning process. A "rating scale" of 0.5 to 5 has been developed for this activity. "Rating A" is an estimate of the geographic extent of each potential nonpoint source as a percentage of the contributing watershed area, percent of stream miles affected, or number of acres. "Rating B" is an estimate of the relative contribution from each major source of the pollutant causing the impairment. The overall relative "Impact Ratings" for each source is calculated by multiplying Rating A by Rating B.

The following table provides guidance for rating the estimated extent (Rating A) and portion of the contribution (Rating B) from each potential source and cause.

| **Rating A:** Estimated Geographic Extent of the Source or Cause in the Contributing Watershed | **Rating B:** Estimated Portion of Contribution from the Source to the Pollutant Load Causing the Impairment | **Rating** |
|---|---|---|

| | | |
|---|---|---|
| None or negligible (approximately 0-5%) | None or negligible (approximately 0-5%) | 0.5 |
| Scattered or low (approximately 5-20%) | Scattered or low (approximately 5-20%) | 1 |
| Medium (approximately 20-50%) | Medium (approximately 20-50%) | 3 |
| Widespread or high (approximately 50% or more) | Widespread or high (approximately 50% or more) | 5 |
| Unknown | Unknown | UNK |

Comments on the source of information used to determine the extent or contribution are entered in the applicable columns in Table 4. Appropriate management actions (i.e. watershed assessments, increased water quality monitoring, etc.) are suggested where available information is deemed inadequate to estimate the extent and relative contribution of significant potential sources.

**Table 4. EVALUATION OF POTENTIAL SOURCES OF STREAM SEGMENT IMPAIRMENT**

**CRITERION: Fecal Coliform Bacteria**

| POTENTIAL SOURCES | ESTIMATED EXTENT OF CONTRIBUTION | | ESTIMATED PORTION OF CONTRIBUTION | | *IMPACT RATING (A X B)* |
|---|---|---|---|---|---|
| | Comments | *Rating (A)* | Comments | *Rating (B)* | |
| Wildlife | Throughout. | 3 | Reports of wild hog, coyote, and beaver populations in the undeveloped forested lands of the watershed. Hunting occurs in the watershed. Dismantled beaver dam visible on the upstream portion of the stream, fox was observed at survey location | 1 | 3 |
| Agricultural Use (Row Crop) (Pasture/Livestock) | Throughout for row cropping. Low for pasture and livestock (cattle and swine) uses. | 1 | Row cropping activity visible in the watershed but only commercial fertilizers used (no manure application). Swine Farms in the watershed were closed by 1995; 2001 TMDL Implementation Plan mentioned that private landowners keeping agricultural livestock on their property have ceased to do so. | .5 | .5 |
| Urban Development (residential) | Low. | 1 | Sparse development throughout the watershed. Occurrence of failing septic systems could be possible and not reported for repair. | .5 | .5 |

## V. STAKEHOLDERS

Public involvement through the stakeholder process is a vital component of TMDL implementation planning. Stakeholders with local knowledge can provide valuable information regarding their communities, impaired waters, potential sources of impairments, and BMPs that might be employed to improve water quality. This section describes outreach activities engaging local stakeholders in the TMDL implementation plan preparation process, including the number of attendees, meeting dates, and major findings, and recommendations.

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The first stakeholder meeting was announced through public notice published in the local newspaper, the Sylvania Telephone, as well as through invitation letters addressed to a group of initially identified stakeholders that included local officials, members of the Natural Resources Conservation Service, environmental and special interest groups, and representatives from the Coastal Health district. The meeting will be held on Thursday, May 31, 2007, from 6:00-8:00 p.m. at the Bulloch County Center for Agriculture, 151 Langston Chapel Road in Statesboro.

This section will be updated to include the findings of the May 31st meeting as well as additional outreach activities that may occur.

The CGRDC presented information on the TMDL planning process and the development of the plan. Ten people were in attendance, which included two representatives from the Screven County Extension Service, four from the NRCS, one from the Central Savannah River RC&D, one from GSWCC, one representing Screven County (Public Works Director), and the Executive Director of the Ogeechee-Canoochee Riverkeeper.

We encouraged input from those who are familiar with the watershed and how to address the potential nonpoint source contributors of fecal coliform bacteria. Through discussion with the group, a potential nonpoint source – the application of manure to pastureland/cropland – was eliminated.

Some of those were concerned that they thought that Jackson Branch should have been de-listed based on samples taken in 2001. The group also said that Screven County is going through another severe drought.

Additional meetings and outreach activities are expected to occur during the month of August.

Following is a list of advisory committee or watershed group members who participated in this TMDL implementation planning process.

**Table 5. STAKEHOLDER ADVISORY GROUP MEMBERS**

| NAME/ORG | ADDRESS | CITY | STATE | ZIP | PHONE | E-MAIL |
|---|---|---|---|---|---|---|
| Tom Joyner - GSWCC | 151 Langston Chapel Rd | Statesboro | GA | 30458 | 912-681-5241 | tjoyner@gaswcc.org |
| Rahn Milligan - GSWCC | 151 Langston Chapel Rd | Statesboro | GA | 30458 | 912-681-5241 | rmilligan@gaswcc.org |
| Glyn Thrift - NRCS | 151 Langston Chapel Rd | Statesboro | GA | 30458 | 912-871-2600 | glyn.thrift@ga.usda.gov |
| Gene Oliver – RC&D | 185 Richard Davis Dr, Suite 201 | Richmond Hill | GA | 31324 | 912-459-2070 | gene.oliver@ga.usda.gov |
| Austin Blackburn - NRCS | 216 Mims Rd | Sylvania | GA | 30567 | 912-564-2207 | austin.blackburn@ga.usda.gov |
| Jason Gatch - NRCS | 151 Langston Chapel Rd | Statesboro | GA | 30458 | 912-871-2600 | jason.gatch@ga.usda.gov |
| | | | | | | |

Major stakeholders in the watershed are listed in Appendix A.

## VI. MANAGEMENT MEASURES AND ACTIVITIES

Table 6A identifies significant BMPs that either have been or may be implemented in the future to address sources of impairment. The BMPs are in Column 1, organization responsible for implementation in Column 2, description of the measure(s) in Column 3, and sources of funding or other resources in Column 4. Column 5 contains one of the following status codes: (A) installed and active; (AE) active and will be enhanced or expanded; (R) required by law, regulation or permit conditions; (P) currently proposed, but not required; (NR) new recommendation; or (NE) enhanced existing recommendation. Column 6 shows the approximate date when the measure has or will be implemented. Column 7 contains an "extent" rating for the BMP or the percentage of individual sources to which the BMP has or will be applied (see the following table). Column 8 is an estimated BMP "effectiveness" rating that may be either provided by local experts or derived from technical guidance information. The following table provides guidance for rating the estimated management measure "extent" and "effectiveness" of each significant potential source.

| **BMP Extent** (Percentage of Sources to Which the BMP Has or Will Be Applied) | **BMP Effectiveness** (Percent Removal of Pollutant by the BMP) | **Rating** |
|---|---|---|
| None or negligible (approximately 0-5%) | None or negligible (approximately 0-5%) | .5 |
| Scattered or low (approximately 5-20%) | Low to medium (approximately 5-25%) | 1 |
| Medium (approximately 20-50%) | Medium to High (approximately 25-75%) | 3 |
| Widespread or high (approximately 50% or more) | High (approximately 75% or more) | 5 |
| Unknown | Unknown | UNK |

### Table 6A. MANAGEMENT MEASURES AND ACTIVITIES

**GENERAL AND SPECIFIC MEASURES APPLICABLE TO ALL CRITERIA**

| BEST MANAGEMENT PRACTICE (1) | RESPONSIBILITY (2) | DESCRIPTION (3) | SOURCES OF FUNDING & RESOURCES (4) | STATUS CODE (5) | TARGET DATE (6) | EXTENT RATING (7) | EFFECT. RATING (8) |
|---|---|---|---|---|---|---|---|
| Federal Clean Water Act, Section 305(b) and 303(d) | USEPA, Georgia DNR/EPD, Local/County Government | The congressional objective of the CWA "is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Section 305 (the *National Water Quality Inventory*) requires states to report progress in restoring impaired waters to EPA on a biennial basis. Section 303(d) requires states to identify 'impaired' waters, submit a list to EPA every two years, and develop TMDLs for these waters. | Federal, State | A | 1972 | 3 | 3 |
| Georgia Water Quality Control Act (OCGA 12-5-20) | Georgia Department of Natural Resources Environmental Protection Division | Makes it unlawful to discharge excessive pollutants (sediments, nutrients, pesticides, animal wastes, etc.) into waters of the State in amounts harmful to public health, safety, or welfare, or to animals, birds, or aquatic life or the physical destruction of stream | State | A | 1964 | 1 | UNK |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | habitats. | | | | | |
| Georgia Planning Act, Part 5 | Local/County Government | Coordinated Planning Program, managed by Georgia DCA, assigns local governments Environmental Planning Criteria (set by Georgia DNR) to include in local long-term comprehensive plans:<br>• Water Supply Watersheds<br>• Groundwater<br>• Wetlands<br>• Protected Rivers<br>• Protected Mountains<br>Program also requires local governments to identify Developments of Regional Impact (DRI) and develop plans to protect and manage Regional Impact Resources (RIR). | Local/County Governments Impact Fees (proposed amendments are under review) | AE | 1992 | 1 | |
| Georgia River Basin Management Planning Act, Georgia Code Section 12-5-521 | Georgia DNR/EPD | River Basin Management Plans describe strategies and measures necessary for local governments, businesses, and citizen groups to educate the general public on matters involving the environmental and ecological concerns specific to the river basin; improve water quality and reduce pollution at the source; improve aquatic habitat and reestablish native species of fish; restore and protect wildlife habitat; and provide recreational benefits. | State, Local/County Government | A | 2001 Ogeechee River Basin | UNK | |
| Georgia Erosion & Sedimentation Control Act, Construction Permit, 2003 Amendment | Local/County Government, Georgia DNR/EPD, Georgia Soil & Water Conservation Commission | Local/county government certified by Georgia EPD as Local Issuing Authority for land-disturbing activities. Requires Erosion & Sedimentation Control Plan incorporating best management practices plus "Qualified Personnel" Training and Certification Program adopted from Georgia Soil & Water Conservation Commission. Certification of on-site "Qualified Personnel" to ensure proper design, construction and maintenance of standard E & S control measures and storm water management practices. | State, Local/County Government | A | 2003 | UNK | 1 |
| Construction Storm Water Discharge NPDES Permit | Georgia DNR/EPD, Screven County | General storm water discharge permit for stand-alone construction sites; infrastructure projects; and common developments. Requires implementation of Erosion, Sedimentation and Pollution Control Plan plus monitoring of discharge for compliance with Georgia's in-stream water quality standards. | State | A | UNK | 1 | 1 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| New Development Ordinance Revisions | Local/County Government | Review current local Erosion & Sediment Control ordinances and modify as appropriate. Include requirements for professionals involved in erosion and sediment control design and construction to be certified by the county. Require pollution prevention at the construction site through preparation of Erosion, Sedimentation & Pollution Control Plan to address issues such as trash, construction debris, leaking vehicles, storage of chemicals, etc. Subdivision ordinances addressing channel protection and conservation will provide further guidelines for construction activities. | Local/County Government | A | UNK | UNK | 1 |
| Regulation of On-Site Sewage Management Systems, IAW O.C.G.A. 290-5-26 | Georgia DHR, County Board of Health | Rules and regulations for installation and repair of on-site sewage management systems. | State, County Board of Health | A | UNK | UNK | 1 |
| Section 319(h) Nonpoint Source Implementation Grant | Georgia Environmental Protection Division | Funds distributed through a competitive process to public agencies, regional development centers, State colleges and universities, and State agencies. Eligible projects include TMDL or Watershed Management Plan Implementation, BMP Demonstrations, and Information and Education. | Federal and State Cost Share Program. Recipient must provide 40% match. | A | 1987 | UNK | 3 |
| Federal Farm Bill (Swampbuster Ag) | United States Department of Agriculture / National Resources Conservation Services | Prohibits landowners participating in federal price support programs from converting forested wetlands to agriculture. | Federal | A | 1985 | UNK | UNK |
| Water Bank Act | United States Department of Agriculture / National Resources Conservation Services | To preserve, restore and improve wetlands of the Nation and thereby to conserve surface waters to preserve and improve habitat for migratory waterfowl and other wildlife resources to retire lands not in agricultural production to enhance the natural beauty of the landscape and to promote comprehensive and total water management planning.10-year contracts with landowners to preserve wetlands and retire adjoining agricultural lands. | Federal Annual payments may be made to participating owners, and the costs of conservation measures may be shared. Total annual payments to owners were limited to $10 million in any year. | A | 1970 Amended 1980 and 1984 | UNK | UNK |
| Georgia Best Management | Georgia Department of Agriculture / | Informs those involved in the agricultural business of effective practices to minimize | State | A | UNK | UNK | UNK |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Practices | Georgia Environmental Protection Division for enforcement action. | nonpoint source pollution. | | | | | |
| Georgia Rules and Regulations for Water Quality Control Chapter 391-3-6-.20 &. 21 | Georgia Department of Agriculture / Georgia Environmental Protection Division for enforcement action. | Outlines the Swine and non-swine Feeding Operation Permit Requirements for Concentrated Animal Feeding Operations (CAFOs) with more than 300 animal units. CAFOs of more than 300 but equal to or less than 1000 animal units receive a land application system (LAS) permit. Larger CAFOs with more than 1000 but less than 3000 must obtain an NPDES permit from EPD. | | A | 2005 | UNK | UNK |
| National Pollutant Discharge Elimination System (NPDES) Permit Regulations for CAFOS (40 CFR Part 122 & 412) | Environmental Protection Agency and Georgia Environmental Protection Division | Permitting program created under the Clean Water Act to protect and improve water quality by regulating Concentrated Animal Feeding Operations (CAFOs) and providing minimum permit requirements for CAFOs of more than 1000 animal units. | Federal and State | A | 2006 | .5 | UNK |
| Chapter 40-13-8 Animal Manure Handlers Rules of Georgia Department of Agriculture Animal Industry Division | Georgia Department of Agriculture | This requires that persons engaged in removing animal manure from livestock/poultry production areas, transporting animal manure on public roadways, or depositing animal manure to a premise other than its point of origin obtain a permit and follow rules to control animal disease, and outlines regulations for transportation, equipment and storage. | State | A | 2003 | .5 | UNK |
| Farm Bill 2002 | United States Department of Agriculture / National Resources Conservation Services | Enhances long-term quality of our environment and conservation of our natural resources. This bill provides several opportunities for receiving grants to improve water quality. | Federal Cost-Share and Incentive Programs. | A | 202 | UNK | UNK |
| Conservation of Private Grazing Land Program | United States Department of Agriculture / National Resources Conservation Services | This technical assistance will offer opportunities for: better grazing land management; projects for improving water quality include: protecting soil from erosive wind and water; conserving water; providing habitat for wildlife; sustaining forage and grazing plants. | Federal (Farm Bill 2002) This is not a Cost-Share Program. | A | 2002 | .5 | UNK |
| Conservation Security Program | Natural Resources Conservation | This is the first program that rewards farmers and ranchers for high levels of | Federal (Farm Bill 2002) Cost Share There is three tiers of | A | 2002 | UNK | UNK |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| (CSP) | Services | environmental stewardship. Producers on cropland, orchards, vineyards, pasture and range may apply for CSP regardless of size, type of operation, or crops produced. Land in other cost share programs is not eligible. An enhancement example is to install a riparian buffer. | involvement, which result in different expectations and cost share opportunities. | | | | |
| Environmental Quality Incentives Program (EQIP) | Natural Resources Conservation Services | Voluntary program that provides technical and cost share assistance for protection of ground and surface water, erosion control, air quality, wildlife habitat, and plant health. | Federal (Farm Bill 2002)<br>50% cost share with possible additional incentive payments | A | 2002 | UNK | UNK |
| Wetlands Reserve Program (WRP) | Natural Resources Conservation Services | Provides technical and financial assistance to landowners to enhance degraded wetlands degraded by farming or draining. There are three options with WRP to receive funds that have differing time agreements and easements resulting in different cost share. In all programs participants control access to the land, may lease or use land for hunting, fishing, and other passive recreational activities. Compatible uses are allowed as long as the do not degrade the wetland. | Federal (Farm Bill 2002) Cost Share 1. Permanent Easement :Pays appraised value of land ($2,000/ acre cap) and 100% of costs of restoration.<br>2. 30-Year Easement: Pays 75% of appraised value of land and 75% of restoration costs.<br>3. Restoration Cost Share Agreement: Pays 75% of restoration costs, no easement on the property. | A | 2002 | UNK | UNK |
| Conservation Reserve Program (CRP) | Natural Resources Conservation Services / USDA Farm Services Agency | Provides technical assistance, rental payments and cost share funding to address specific natural resource concerns including: protection if ground and surface waters, soil erosion and wildlife habitat. Eligible practices include tree planting, grassed waterways, wildlife habitat buffers, and shallow water area for wildlife and filter strips. | Federal<br>Annual rental payment for land taken out of production and 50% cost share for practice installation. | A | 1986 | UNK | UNK |
| GSWCC BMP Manual for Georgia Agriculture | State/Local/Private landowners | Manual provides the agriculture community with knowledge of the best management practices (BMPs) that work to protect surface water quality as well as to help agency personnel educate farmers about BMPs and their usefulness. It is a compilation of conservation practices that address surface water quality and includes an estimate of the effectiveness and relative cost of each BMP. | State/local | A | 2007 | UNK (Possibly high) | UNK |
| River Corridor Protection Ordinance | Screven County | Establishes River Corridor Protection Districts for Portions of the Ogeechee and Savannah River Basins located within the county; Limits development activities within | Screven County | A | 1999 | 2 | 1 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | the buffer, to include septic system drainfields | | | | | |
| Wetlands Protection Ordinance | Screven County | Establishes boundaries around wetlands within the county and limits types and density of developments | Screven County | A | 1999 | 1 | 1 |
| Federal Clean Water Act, Section 305(b) and 303(d) | USEPA, Georgia DNR/EPD, Local/County Government | The congressional objective of the CWA "is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Section 305 (the *National Water Quality Inventory*) requires states to report progress in restoring impaired waters to EPA on a biennial basis. Section 303(d) requires states to identify 'impaired' waters, submit a list to EPA every two years, and develop TMDLs for these waters. | Federal, State | A | 1972 | 3 | 3 |
| Georgia Water Quality Control Act (OCGA 12-5-20) | Georgia Department of Natural Resources Environmental Protection Division | Makes it unlawful to discharge excessive pollutants (sediments, nutrients, pesticides, animal wastes, etc.) into waters of the State in amounts harmful to public health, safety, or welfare, or to animals, birds, or aquatic life or the physical destruction of stream habitats. | State | A | 1964 | 1 | UNK |

**GENERAL AND SPECIFIC MEASURES APPLICABLE TO FECAL COLIFORM**

| BEST MANAGEMENT PRACTICE (1) | RESPONSIBILITY (2) | DESCRIPTION (3) | SOURCES OF FUNDING & RESOURCES (4) | STATUS CODE (5) | TARGET DATE (6) | EXTENT RATING (7) | EFFECT. RATING (8) |
|---|---|---|---|---|---|---|---|
| River Corridor Protection Ordinance | Screven County | Establishes River Corridor Protection Districts for Portions of the Ogeechee and Savannah River Basins located within the county; Limits development activities within the buffer, to include septic system drainfields | Screven County | A | 1999 | 2 | 1 |
| Wetlands Protection Ordinance | Screven County | Establishes boundaries around wetlands within the county and limits types and density of developments | Screven County | A | 1999 | 1 | 1 |
| Flood Damage Prevention Ordinance | Screven County | Restricts potentially harmful filling, grading, dredging, or other activities that may redirect or increase natural floodwaters, and also limits impervious surface, thus reducing potentially contaminated runoff. | Screven County | A | 1997 | 1 | 1 |
| Federal Clean Water Act, Section 305(b) and 303(d) | USEPA, Georgia DNR/EPD, Local/County Government | The congressional objective of the CWA "is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Section 305 (the *National Water Quality Inventory*) requires states to report progress in restoring impaired waters to EPA on a biennial basis. Section 303(d) requires states to identify 'impaired' waters, submit a list to EPA every two years, and develop TMDLs for these waters. | Federal, State | A | 1972 | 3 | 3 |
| Georgia Best Management Practices | Georgia Department of Agriculture / Georgia Environmental Protection Division for enforcement action. | Informs those involved in the agricultural business of effective practices to minimize nonpoint source pollution. | State | A | UNK | UNK | UNK |
| Section 319(h) Nonpoint Source Implementation Grant | Georgia Environmental Protection Division | Funds distributed through a competitive process to public agencies, regional development centers, State colleges and universities, and State agencies. Eligible projects include TMDL or Watershed Management Plan Implementation, BMP Demonstrations, and Information and Education. | Federal and State Cost Share Program. Recipient must provide 40% match. | A | 1987 | UNK | UNK |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Commercial Waste Transporter Law (12-15-21); Regulation of Commercial Waste Originators, Pumpers, Transporters, Processors, and Disposal Facilities (391-3-6-.24) | State, (Pollution Prevention Assistance Division), Local, DHR | Provide minimum uniform statewide regulations for the purpose of regulating transporters that collect and/or dispose of commercial waste; to prevent the improper disposal of commercial wastes; to provide a commercial waste transporter permit that is accepted statewide; and to provide for fees for the cost of permitting and inspecting transporter vehicles. | State, local | A | 2005 | UNK | UNK |

Work Sheet for Table 6B is designed to evaluate the capacity of existing, proposed, or pending BMPs to achieve nonpoint source load reductions specified in the TMDL as well as other BMPs that might be implemented to further reduce pollutant loadings from significant sources. This approach is intended to provide a usable local guide to adopt BMPs for achieving water quality goals, establishing priorities for grant or loan programs, and identifying priorities for local watershed assessments and protection plans.

Columns 1 and 2 contain significant potential sources and their corresponding impact ratings (from Table 3). Column 3 lists significant BMPs applicable to each significant source (from Table 6A). Column 4 is a very brief "evaluation summary", developed in conjunction with local stakeholders, of whether existing or proposed BMPs will achieve load reductions identified in the TMDL. Column 5 contains a summary of additional information needed to further determine significant sources and their relative contributions, and could contain recommendations for water quality monitoring, watershed assessments, or additional data acquisition. If current or proposed management measures are judged inadequate to achieve the load reductions for significant sources identified in the TMDL, additional management measures that could effectively reduce pollutant loads should be listed in "Additional Information / Measures Needed" (Column 5) and included as new enhanced existing recommendations (NE) or new recommendations (NR) under "Status Code (5)" in Table 6B and under "Milestones" (Table 9).

**Work Sheet for Table 6B. EVALUATION OF GENERAL AND SPECIFIC MANAGEMENT MEASURES AND ACTIVITIES APPLICABLE TO EACH CRITERION**

**APPLICABLE TO FECAL COLIFORM BACTERIA**

| **SIGNIFICANT POTENTIAL SOURCES (1)** (From Table 3) | **IMPACT RATING (2)** (From Table 3) | **APPLICABLE BMPs (3)** (From Table 6A) | **EVALUATION SUMMARY (4)** | **ADDITIONAL INFORMATION / MEASURES NEEDED (5)** |
|---|---|---|---|---|
| Wildlife | 3 | Wild hog, beaver management | Reducing wild hog population could possibly | Educate hunters and property owners on the risks of dumping animal carcasses in streams |

| | | | | |
|---|---|---|---|---|
| | | | reduce fecal coliform loads and allow for natural buffer and wetlands restoration to occur. Use of Clemson Pond Levelers to reduce flooding has been used instead of killing beaver. | Possibly develop watershed assessment and protection plan. |
| | | | | |
| Agricultural Livestock | .5 | Several NRCS sponsored measures. | Many could be applicable to provide education and assistance for fencing to prevent stream access and buffer restoration. | |
| | | | | |
| | | | | |
| Urban Development | .5 | Regulation of On-Site Sewage Management Systems, IAW O.C.G.A. 290-5-26 | Ensures that system design and installation guidelines are met; however, system malfunctions may not be corrected for long periods of time.<br><br>Illegal pumping (emptying) of waste transport trucks (septic sludge, fats, oils, and grease) into the rural streams and creeks may not necessarily be a practice in Screven County, but local officials should ensure that the applicable state laws are followed and establish local ordinances if needed. | Develop county-wide inventory for maintenance scheduling and adopt ordinances that require pump-outs at least every five years. |
| | | | | Develop County-wide Greespace Plan. |
| | | Commercial Waste Transporter Law (12-15-21) | | Update local stormwater management regulations as new technologies and BMPs develop and improve.<br><br>Incorporate local regulations similar to the state regulations for commercial waste haulers. |

Table 6B identifies new enhancements to existing measures (NE) or new recommended measures (NR) that could improve or supplement current or proposed management measures listed in Table 6A, where current and required measures have been judged inadequate for achieving the load reductions from significant sources identified in the TMDL. After further evaluation generated in the Work Sheet for Table 6B, the additional management measures proposed in Table 6B have been determined more effective in reducing pollutant loads from the most likely sources of impairment. The BMPs are listed in Column 1, organization responsible for implementation in Column 2, description of the measure(s) in Column 3, and sources of funding or other resources in Column 4. Column 5 contains one of the following status codes: (NE) enhanced existing measure or (NR) new recommended measure. Column 6 shows the approximate date when the measure has or will be implemented. Column 7 contains an "extent" rating for the BMP or the percentage of individual sources to which the BMP could be applied (see the following table). Column 8 is an estimated BMP "effectiveness" rating that may be either provided by local experts or derived from technical guidance information. The following table provides guidance for rating the estimated management measure "extent" and "effectiveness" of each significant potential source.

| **BMP Extent**<br>(Percentage of Sources to Which the BMP Has or Will Be Applied) | **BMP Effectiveness**<br>(Percent Removal of Pollutant by the BMP) | **Rating** |
|---|---|---|
| None or negligible (approximately 0-5%) | None or negligible (approximately 0-5%) | .5 |
| Scattered or low (approximately 5-20%) | Low to medium (approximately 5-25%) | 1 |
| Medium (approximately 20-50%) | Medium to High (approximately 25-75%) | 3 |
| Widespread or high (approximately 50% or more) | High (approximately 75% or more) | 5 |
| Unknown | Unknown | UNK |

## Table 6B. RECOMMENDED ADDITIONAL MANAGEMENT MEASURES AND ACTIVITIES TO ACHIEVE LOAD REDUCTIONS (COMPILED FROM TABLE 6A AND COLUMN 5 IN WORK SHEET FOR TABLE 6B)

**APPLICABLE TO FECAL COLIFORM BACTERIA**

| BEST MANAGEMENT PRACTICE (1) | RESPONSIBILITY (2) | DESCRIPTION (3) | SOURCES OF FUNDING & RESOURCES (4) | STATUS CODE (5) | TARGET DATE (6) | EXTENT RATING (7) | EFFECT. RATING (8) |
|---|---|---|---|---|---|---|---|
| Outreach – Education – Publication | State, RDC, local, NRCS, County Extension Service | Develop program to educate hunters and property owners to discourage the placement (illegal dumping) of animal (both wild game and domestic) carcasses in or near bodies of water, specifically streams on the 305(b)/303(d) list. Publication in Georgia Outdoor News, Georgia Outdoor News Network, local paper. | State, Federal, local | NR | 2010 | UNK | UNK |
| Develop Greenspace Plan | Screven County | Identify areas in the county that need to be preserved from future development. Preserving land helps land value, and preserving watershed can protect water quality for future residents. | Local, State | NR | 2010 | UNK | UNK |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Coastal Supplement to the Georgia Stormwater Management Manual (GSMM). | EDP, CRD, Center for Watershed Protection, Savannah-Chatham County MPC | Consequently, the GSMM does not specifically address many of the physiographic features (e.g. flat terrain, shallow groundwater), and water quality concerns (e.g. nitrogen, bacteria) of the coast. The State has decided to develop the Coastal Stormwater Supplement (CSS) to provide stormwater management guidance that is better adapted to the coastal zone. | State | NE | 2007 | UNK | UNK |
| Wild Hog Management Assistance | USDA Wildlife Services (Athens) | Developed programs to reduce or eliminate localized wild hog populations. | State, local | NR | 2010 | UNK | UNK |
| Landowner education and Fencing to prevent stream access from domestic animals | NRCS, local, private landowners | Although domestic animal access to stream was not observed in the Jackson Branch watershed, the practice was observed in several areas throughout the Lower Ogeechee Basin. Funding for such a project should therefore be considered for the entire basin. | State, local, 319 funds | NR | 2010 | 5 | 5 |
| Develop Jackson Branch Watershed Assessment and Protection Plan | Screven County, state, CGRDC | Provide an up-to-date assessment of conditions in the watershed. May also help to update and verify success of the TMDL Implementation Plan. Identify poor land use decisions in the watershed. | State, local | NR | 2010 | 5 | 5 |
| Additional monitoring in the segment watershed | Screven County, CGRDC | Obtain local or regional SQAP approval. State 303(d) listing information for this segment is severely dated. New water quality samples would be useful in developing the watershed assessment and protection plan. | State | NR | 2008 | UNK | UNK |

## VII. MONITORING PLAN

Water quality monitoring serves several purposes, including obtaining data to determine sources of pollution, supporting management decisions, describing baseline conditions, and evaluating the effects of management measures on water quality. This section describes parameters to be monitored, status, whether monitoring is required for watershed assessments or storm water permits, and the intended purpose. Submittal of a Sampling and Quality Assurance Plan (SQAP) for EPD approval is mandatory if monitoring data is to be used in support of listing decisions.

Water quality data used to evaluate the criteria violated are less than five years old? Yes [ ] No [ **X** ].

**Table 7. MONITORING PLAN**

| PARAMETER (S) TO BE MONITORED | RESPONSIBLE ENTITY | STATUS (CURRENT, PROPOSED, OR RECOMMENDED) | TIME FRAME | | PURPOSE (If for listing assessment, date of SQAP submission) |
|---|---|---|---|---|---|
| | | | START | END | |
| Fecal Coliform | EPD, USGS | Current | Every 5 years (2007) | | Ongoing monitoring for listing, delisting or impaired streams |
| Multiple | Screven County, CGRDC, other regional organization | Proposed | 2008 | 2017 | Obtain SQAP approval to perform monitoring in order to support/revise the Implementation Plan and listing/delisting purposes. |

## VIII. PLANNED OUTREACH FOR IMPLEMENTATION

Table 8 lists and describes outreach activities that will be conducted to support this implementation plan, or help to improve water quality in the segment watershed. Identify either the projected start date or completion date. At a minimum, this is to include all education/outreach activities defined in the contractual Scope of Work for TMDL Implementation Plan development or revisions.

**Table 8. PLANNED OUTREACH FOR IMPLEMENTATION**

| RESPONSIBILTY | DESCRIPTION | AUDIENCE | START OR COMOPLETION DATE |
|---|---|---|---|
| CGRDC, Screven County, NRCS, stakeholders | Identify sources of funding for BMP demonstration projects (319 program) for agricultural uses. | Private property owners, local government officials | Proposed |
| CGRDC, Screven County | Develop outreach program concerning stream cleanup efforts to be used as volunteer credits for graduation. | Board members, students and parents of the local school system | Proposed |
| Screven County/Citizens of Screven County | Adopt-A-Stream Program. Efforts to raise public awareness about water quality to enlist the public support and action in monitoring and protecting water resources. | Concerned citizens | Proposed |
| Screven County, CGRDC | Obtain a SQAP and submit water quality sample results to EPD. | EPD, local | Proposed |
| State, CGRDC, local, NRCS, County Extension | Education on the potential adverse impacts that the dumping of animal carcasses in water bodies | Hunters, land owners, concerned citizens | Proposed |

| | | | |
|---|---|---|---|
| Service | may have on water quality. | | |

## IX. MILESTONES AND MEASURES OF PROGESS FOR BEST MANAGEMENT PRACTICES (BMPs) AND OUTREACH

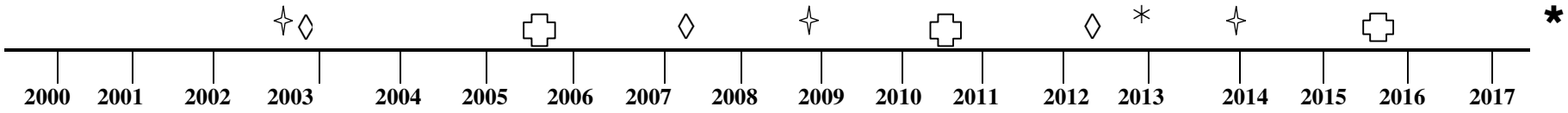
Table 9 tracks and reports progress of significant management measures identified in Tables 6A, 6B, and other sections of this plan, including outreach, additional monitoring and assessments, and enhancement or installation of BMPs. Significant activities and the target dates of accomplishment are listed under STATUS, and comments are provided on the effectiveness of the management measure, the degree of community support, what was learned, how the measure might be improved in the future, and other pertinent observations.

**Table 9. MILESTONES AND MEASURES OF PROGRESS**

| BEST MANAGEMENT PRACTICE | RESPONSIBLE ORGANIZATION | STATUS PROPOSED | STATUS INSTALLED | COMMENT |
|---|---|---|---|---|
| Obtain local/regional SQAP | Screven County, CGRDC | 2008 | | Ensure that monitoring samples would be approved by EPD for listing/delisting purposes. |
| Develop Jackson Branch Watershed Assessment and Protection Plan | Screven County, CGRDC, State | 2010 | | Assessment would provide more current data for the watershed and identify improper land use practices that may contribute to stream impairments. |

# PROJECTED ATTAINMENT DATE

The projected date to attain and maintain water quality standards in this watershed is 10 years from receipt of this TMDL Implementation Plan by Georgia EPD.




✧ Projected EPD Basin Group Monitoring
New TMDLs Completed

◊ Revised or Updated TMDL Implementation Plan Received by EPD

✠ Evaluation of Implementation Plan/water Quality Improvement

✳ Project Attainment for Plans Prepared in 2002

✱ Project Attainment for Plans Prepared in 2007


| | | | | | |
|---|---|---|---|---|---|
| Prepared By: | J. Paul Sansing | | | | |
| Agency: | Coastal Georgia RDC | | | | |
| Address: | P.O. Box 1917 | | | | |
| City: | Brunswick | ST: | GA | ZIP: | 31520 |
| E-mail: | jsansing@coastalgeorgiardc.org | | | | |
| Date Submitted to EPD: | June 15, 2007 | | | Revision: | |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## APPENDIX A.

## STAKEHOLDERS

List the names, addresses, telephone numbers, and e-mail addresses for local governments, agricultural or commercial forestry organizations, significant landholders, businesses and industries, and local organizations, including environmental groups and individuals, with a major interest in this watershed.

| NAME/ORGANIZATION | ADDRESS | CITY | STATE | ZIP | PHONE | E-MAIL |
|---|---|---|---|---|---|---|
| Kings Finishing | PO Box 480 | Statesboro | GA | 30458 | | |
| Thomas Joyner, GSWCC, Statesboro Region VI Office | 151 Langston Chapel Rd | Statesboro | GA | 30458 | 912-681-5241 | |
| Gene Oliver Coastal Georgia RC&D | 185 Richard Davis Drive, Suite 201 | Richmond Hill | GA | 31324 | 912-459-2070 | |
| Central Savannah River RC&D | 3456-D Peach Orchard Rd | Augusta | GA | 30906 | 706-798-7967 | |
| Screven County Commission | P.O. Box 159 | Sylvania | GA | 30467 | 912-564-7535 | |
| Willard Fell, Georgia Forestry Commission | 18899 US Hwy 301 North | Statesboro | GA | 30461 | 912-681-0490 | |
| Ray Hicks, Screven County Cooperative Extension Service | 321 Rocky Ford Road | Sylvania | GA | 30467 | 912-564-2064 | rhicks@uga.edu |
| Patty McIntosh, The Georgia Conservancy | 428 Bull St. | Savannah | GA | 31401 | 912-447-5910 | pmcintosh@gaconservancy.org |
| Chandra Brown, Executive Director, Ogeechee-Canoochee Riverkeeper | P.O. Box 1925 | Statesboro | GA | 30459 | 912-764-2017 | |
| Vernon Edenfield, Screven County Public Works | P.O. Box 1964 | Sylvania | GA | 30467 | 912-863-7001 | sclandfill@planters.net |

## APPENDIX B.

## UPDATES TO THIS PLAN

If this is a major or minor revision of an existing plan, this section will describe the date, section or table updated, and a summary of what was changed and why. Georgia EPD has developed guidelines for revising existing TMDL implementation plans.

*This is a minor plan revision.*

## APPENDIX C. FIELD SURVEYS, NOTES, PHOTOGRAPHS, AND MAPS.

Jackson Branch upstream (north) of SR 17 containing dismantled beaver dam.

Low levels and pooling effect allow hydrilla and hyacinth to occur. Buffer looks good.

The upstream portion maintains a good buffer throughout the stream corridor. Wildlife activity is present in the watershed, as evidenced by a dismantled beaver dam. There is a power line easement that runs parallel to the stream segment. There was also a fox present in the area. Wildlife species that spend most of their time in or near water are more likely to contribute to fecal coliform levels than more terrestrial-oriented species such as deer. The area was surveyed in February 2007. The vegetation is very brown, possible associated with the season, but Screven County is also experiencing severe drought, as noted by the low water levels.